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Abdominal Actinomycosis Mimicking a Malignant Neoplasm

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A 46-YEAR OLD FEMALE was referred to the emergency department with abdominal pain in the right lower hemi-abdomen. An increasing abdominal girth, recurrent fever over the last three months, weight loss of 15 kg over the past six months, and repeated night sweats were reported. One episode of melena had occurred. The patient used an intra-uterine contraceptive device (IUCD) for about six years. Physical examination of the abdomen showed a palpable mass of 10×5 cm in the right lower abdomen. Laboratory analyses revealed leucocytosis (14.4×10^9 cells/L), anemia (103 g/L), an elevated C-reactive protein concentration (164 mg/L), and an elevated CA125 (138 kU/L). Abdominal ultrasonography and a computed tomography scan (CT) showed a heterogeneous, contrast-enhancing mass in the right lower abdominal quadrant (71×51×55 mm) with infiltration of the surrounding adipose tissue (Fig. 1), and a second nodular homogeneous lesion in the mesenteric adipose tissue (25×16 mm). A colonoscopy and gynecologic examination were performed without pathological findings, and the IUCD was removed. Based on the patient history, the described CT findings suggested a malignant neoplasm with synchronous peritoneal carcinomatosis (e.g., an endocrine tumor, a gastrointestinal stromal tumor (GIST) or a leiomyosarcoma). An exploratory laparotomy was performed. Intraoperatively, the tumor was found to have its origin in the right hemicolonic and to infiltrate the abdominal wall, and was thus interpreted as a T4 colon carcinoma. A right colectomy with partial abdominal wall resection (R0) was performed. Additionally, as described in the CT scan, a second tumor mass was found in the greater omentum and was excised completely by partial omentectomy. Pathologic evaluation revealed a yellow knotty tumor in the pericolic adipose tissue close to the ascending colon, about 20 mm distal to the ileocecal valve (Fig. 2A). Histologically, purulent inflammation encroached on parts of the abdominal wall, but no signs of tumor infiltration into the mucosa of the colon were detected. However, sulfur granules (*Actinomyces*) were found, corresponding to the diagnosis of gastrointestinal actinomycosis (Fig. 2B). Consequently, the patient was treated with amoxicillin intravenously every 6 h for 3 wks post-operatively. On the twentieth day another CT scan was performed, showing no residual or recurrent tumor. The intravenous (IV) antibiotic therapy was then changed to an oral regimen for another twelve months. The patient was

discharged from the hospital on post-operative day 26 without any remaining complaints.

Several species of the genus *Actinomyces* are involved etiologically in a characteristic inflammatory syndrome termed actinomycosis, but the most common agents in this disease are *A. israelii* and *A. gerencseriae*. Bradshaw first described abdominal actinomycosis in 1846 as a right iliac fossa mass with spontaneous discharge through the skin [1]. Actinomycotic infection is characterized by the formation of painful inflammatory masses or abscesses. The ileocecal region is the abdominal site affected most commonly [2]. Actinomycosis is three times more common in males than in



FIG. 1. Computed tomography demonstrates the pre-operative mass in the right lower abdomen with infiltration of the surrounding adipose tissue, suspicious for a carcinoma.

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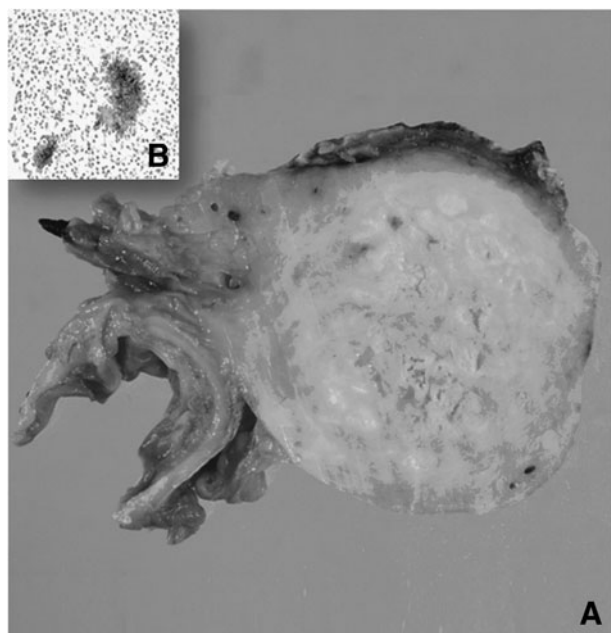


FIG. 2. (A) The macroscopic preparation shows in the pericolic adipose tissue (close to the ascending colon) a yellow, knotty, necrotic tumor. The inflammation encroaches on parts of the abdominal wall. There are no signs of infiltration of the mucosa of the colon. (B) shows the Grocott stain of a sulfur granule (corresponding to *Actinomyces* bacteria)

females [1]. Long term use of an IUCD represents a risk factor for pelvic actinomycosis [4,5]. The infection is transmitted through a breakdown in the endometrium [3].

According to literature, most patients with intestinal actinomycosis undergo an operation due to an unidentified intra-peritoneal mass presumed to be a malignant neoplasm. The diagnosis of abdominal actinomycosis is not made typically until histopathological examination is completed [1].

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